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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/001,341	12/31/97	SHANBROM	E 38786.27

IM22/0517
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EXAMINER

PHAM, M

ART UNIT

PAPER NUMBER

1724

DATE MAILED: 05/17/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/001,341

Applicant(s)

SHANBROM

Examiner

PHAM

Group Art Unit

1724

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

And A

- ☒ Responsive to communication(s) filed on 04/26/99
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-20 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-20 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____.

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____ ☐ Interview Summary, PTO-413
- ☒ Notice of References Cited, PTO-892 ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948 ☐ Other _____

Office Action Summary

Art Unit: 1724

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U. S. Code not included in this action can be found in a prior Office Action.
2. Claims 1-8 and 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weinberg (5,814,135; 14 in Figs. 2 & 3; col. 4, lines 40-47), taken together with Cercone (5,744,150; Abstract; col. 1, lines 8-11; col. 2, lines 28-42 and line 60 through col. 3, line 8; col. 4, lines 14-43; col. 5, lines 20-42), in view of Holter et al (5,015,451; Abstract; col. 2, line 64 through col. 3, line 8) and Scheinberg (3,693,327; col. 2, lines 47-49; col. 6, lines 28-33).

Weinberg discloses a disinfecting air filter comprising the filter material impregnated with elemental iodine. Weinberg further discloses the filter assembly can have a multiple filter media including a HEPA filter for capturing particulate. Weinberg also shows that the iodine-binding material is selected from the group consisting of polyvinyl acetal polymer. Claims 1-8 and 9-20 differ from the disclosure of Weinberg in that the filter assembly has a layer of polyvinyl acetal polymer binding iodine with an iodine capture layer comprising a humidifying agent and a visual indicator of iodine saturation. Cercone

Art Unit: 1724

discloses a disinfecting/antimicrobial material comprising polyvinyl acetal polymer binding iodine producing a visually indicating color. The color change indicates the activation of an iodine/polyvinyl acetal complex or the antimicrobial activity in the material. Cercone further discloses the iodine capture layer comprising a humidifying agent selected from the group consisting of ethylene glycol, propylene glycol and polyethylene glycol. Holter et al disclose a filter treated with a humidifying agent which is propylene glycol for eliminating odors. Scheinberg discloses a filter having a visual indicator of the saturation of its ability to function so that the filter medium can be visually detected and replaced upon saturation. It would have been obvious to one skilled in the art at the time the invention was made to modify the disinfecting air filter of Weinberg with polyvinyl acetal binding with iodine as taught by Cercone in combination with humidifying agent such as propylene glycol as taught by Holter et al in and a visual indicator of the saturation as taught by Scheinberg in order to provide an improved air filter which optimizes air discharge purification, maximizes killing of pathogens and microorganisms, and is low cost in manufacturing.

Art Unit: 1724

Response to Amendment

3. Applicant's arguments filed on April 26, 1999 have been fully considered but they are not persuasive.

Applicant's main argument is that the primary reference Weinberg does not disclose a layer of "porous polyvinyl acetal polymer to bind the iodine vapor passing through". The Examiner newly introduces the Cercone reference to show that the disinfecting/antimicrobial material can comprise a soft, dry, iodine/acetalized polyvinyl alcohol complex sponge material having a yellow-gold coloration which self-indicates activation of the antimicrobial elements in the complex. Cercone further discloses the iodine capture layer comprising a humidifying agent selected from the group consisting of ethylene glycol, propylene glycol and polyethylene glycol. It would have been obvious to one skilled in the art at the time the invention was made to modify the disinfecting air filter of Weinberg with a layer of polyvinyl acetal binding with iodine and a humidifying agent in combination with a visual indicator as taught by Cercone in order to provide an improved air filter which optimizes air discharge purification, maximizes killing of pathogens and microorganisms, and is low cost in manufacturing.

Art Unit: 1724

Applicant's amendments have been thoroughly considered but they are moot in view of the rejections as discussed in paragraph 2 above.

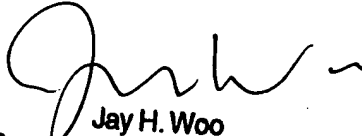
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh-Chau Pham whose telephone number is (703) 308-1605. The examiner can normally be reached on Monday-Thursday from 7:15 a.m. to 5:45 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Jay Woo, can be reached on (703) 308-3793. The fax phone number for this Group is (703) 305-7718 or (703) 305-3601.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

MCP

May 10, 1999


Jay H. Woo
Supervisory Patent Examiner
Technology Center 1700

5-10-99